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(54) **ALIGNMENT OF ULTRASOUND TRANSDUCER ARRAYS AND MULTIPLE APERTURE PROBE ASSEMBLY**

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See application file for complete search history.

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(57) **ABSTRACT**

The effective aperture of an ultrasound imaging probe can be increased by including more than one transducer array and using the transducer elements of all of the arrays to render an image can greatly improve the lateral resolution of the generated image. In order to render an image, the relative positions of all of the elements must be known precisely. Systems and methods for accurately calibrating and adjusting a multi-aperture ultrasound system are disclosed. The relative positions of the transducer elements can be computed and aligned prior to and during probe assembly.

31 Claims, 13 Drawing Sheets